UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/624,022	07/21/2003	Hector L. Casal	BP949302	5093

68261 7590 01/16/2008

INEOS USA LLC
3030 WARRENVILLE RD, S/650
LISLE, IL 60532

EXAMINER	
SINES, BRIAN J	

ART UNIT	PAPER NUMBER
1797	

MAIL DATE	DELIVERY MODE
01/16/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/624,022	CASAL ET AL.	
	Examiner	Art Unit	
	Brian J. Sines	1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11/13/2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *10-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *10-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 11/13/2007 have been fully considered but they are not persuasive. The previous rejection has been modified in view of applicant's arguments.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

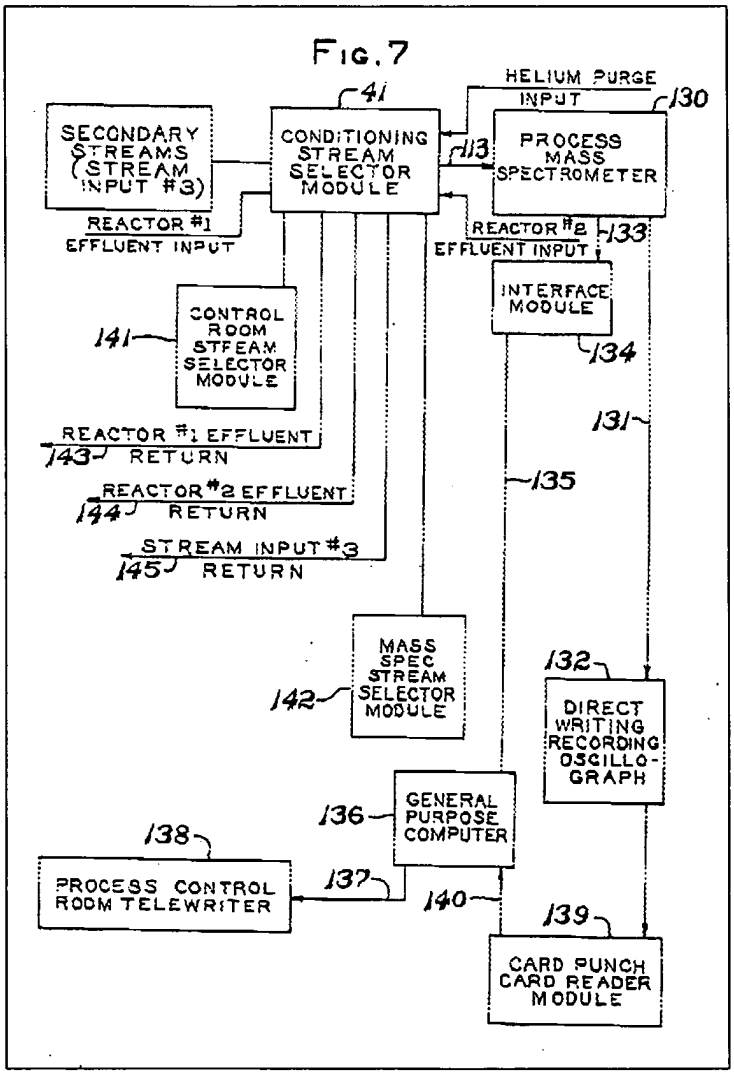
The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 10 – 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dunn (U.S. Pat. No. 3,959,341) ("Dunn") in view of Christensen (U.S. Pat. No. 6,036,840 A) ("Christensen").

Regarding claims 10 – 17, Dunn teaches the synthesis of acrylonitrile using an ammoxidation reactor (see, e.g., Abstract). Dunn teaches that the reactor effluent from the reactor effluent discharge line 10 is sampled using probe assembly 11, which is connected to a mass spectrometer analyzer 130 for analyzing the effluent composition (see, e.g., col. 7, line 32 –

col. 12, line 68; figures 1 and 5 – 7). Dunn teaches the use of a reactor controller comprising a computer system (e.g., 134, 136 and 138), which inherently comprises a microprocessor, for reactor process monitoring and control for the disclosed system (see, e.g., col. 1, lines 10 – 24; col. 2, line 60 – col. 6, line 60; col. 13, line 51 – col. 14, line 24; figure 7). Dunn teaches that the process can be controlled by controlling the feed of ammonia and air into the reactor (see, e.g., Abstract).



Dunn further teaches that a typical mass spectrometer analysis is taken on the reactor effluent comprising various gases, such as carbon monoxide, carbon dioxide, ammonia, water, hydrogen cyanide, acetonitrile, acrylonitrile, propylene and acrolein (see, e.g., col. 16, lines 5 – 68). Therefore, it would have been obvious to a person of ordinary skill in the art to output and display quantitative data for each of the plurality of the reactor effluent components and to use this data to adjust and control the operation of the reactor.

Dunn does not specifically teach the use of a Fourier Transform infrared spectrometer for performing the effluent gas analysis.

The applicant is advised that the Supreme Court recently clarified that a claim can be proved obvious merely by showing that the combination of known elements was obvious to try. In this regard, the Supreme Court explained that, "[w]hen there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill in the art has a good reason to pursue the known options within his or her technical grasp." An obviousness determination is not the result of a rigid formula disassociated from the consideration of the facts of the case. Indeed, the common sense of those skilled in the art demonstrates why some combinations would have been obvious where others would not. The combination of familiar elements is likely to be obvious when it does no more than yield predictable results. Furthermore, the simple substitution of one known element for another is likely to be obvious when predictable results are achieved. See *KSR Int'l v. Teleflex Inc.*, 127 Sup. Ct. 1727, 1742, 82 USPQ2d 1385, 1397 (2007) (see MPEP § 2143). In this regard, Christensen does suggest the use of a Fourier Transform infrared spectrometer having a gas sample flow cell for performing reactor effluent gas analysis (see, e.g., col. 14, lines 20 – 43;

col. 19, lines 62 – 65). Christensen explicitly discloses that "[t]he CO_2 -evolution was monitored by leading the exhaust gas from the reactor [reaction chamber 50] (equivalent to the outlet 40 in FIG. 1) through a gas flow-cell in a Fourier transform infrared spectrometer." (see col. 19, lines 62 – 65). Therefore, as shown by Christensen, the use of a Fourier transform infrared spectrometer to monitor the effluent of a reactor as claimed would have had the predictable result of providing a means for effectively monitoring the effluent of a reactor. The incorporation of a Fourier transform infrared spectrometer in place of the mass spectrometer with the disclosed apparatus is the mere substitution of one known element for another to obtain the predictable result of providing an effective means for monitoring the reactor effluent. Furthermore, as shown by Christensen, a person of ordinary skill in the art would accordingly have had a reasonable expectation for success in using a Fourier transform infrared spectrometer to monitor the effluent of a reactor. The prior art can be modified or combined to reject claims as *prima facie* obvious as long as there is a reasonable expectation of success (see MPEP § 2143.02).

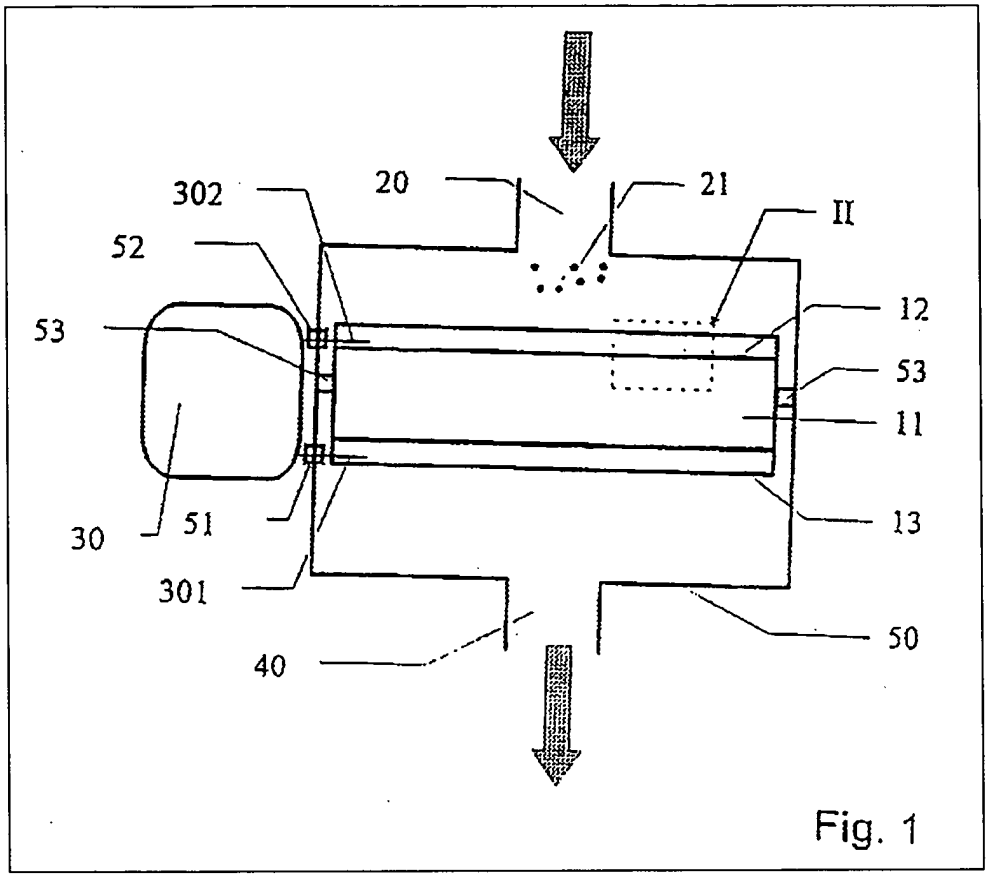


Fig. 1

Additionally, the use of calibration data curves comprising specific absorbance data for each component gas in operating various sensing devices, such as a Fourier Transform infrared spectrometer, is notoriously well known in the art (see MPEP § 2144.03). Therefore, it would have been obvious to a person of ordinary skill in the art to incorporate the use of a Fourier Transform infrared spectrometer for performing the gas analysis on the reactor effluent as claimed in order to effectively monitor the reactor effluent stream composition.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian J. Sines whose telephone number is (571) 272-1263. The examiner can normally be reached on Monday - Friday (11 AM - 8 PM EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Brian J. Sines
Primary Examiner
Art Unit 1743